

(19) World Intellectual Property
Organization
International Bureau



22 FEB 2005



(43) International Publication Date
6 May 2004 (06.05.2004)

PCT

(10) International Publication Number
WO 2004/037976 A3

(51) International Patent Classification⁷: A01N 43/04,
C12Q 1/68, C12N 1/15, 15/12, 15/31, C07H 21/02, 21/04

(21) International Application Number:
PCT/US2003/026166

(22) International Filing Date: 21 August 2003 (21.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/405,602 22 August 2002 (22.08.2002) US

(71) Applicant (for all designated States except US): UNI-
VERSITY OF ROCHESTER [US/US]; 601 Elmwood
Avenue, Box 706, Rochester, NY 14642 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): MAQUAT, Lynne, E.
[US/US]; 1484 East Avenue, Rochester, NY 14610 (US).

(74) Agents: MCKEON, Tina, Williams et al.; Needle &
Rosenberg, P.C., 999 Peachtree Street, Suite 1000, Atlanta,
GA 30309-3915 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
5 August 2004

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: NONSENSE-MEDIATED mRNA DECAY

(57) Abstract: Disclosed are compositions and methods relating to nonsense mediated decay (NMD) particularly in the "pioneer" round of translation. The present invention provides methods of treating disorders relating to NMD and methods of screening substances for use in the study of or treatment of conditions relating to NMD.



WO 2004/037976 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/26166

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A01N43/04; C12Q 1/68; C12N 1/15, 15/12, 15/31; C07H 21/02, 21/04
 US CL : 436/6, 91.1, 91.31, 254.2, 455; 514/44; 536/23.1, 24.5

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 436/6, 91.1, 91.31, 254.2, 455; 514/44; 536/23.1, 24.5

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 West, Dialog

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,071,700 (HE et al) 06 June 2000 (abstract, col 3-6, 7, 9, 11-12, 14-17, 22-23, 33-40, 41-45, claims 1, 4, 7-12, 14)	1-4, 7-14, 16, 30, 41, 42, 37, 38, 57-59 ----- 60-62
X,P	US 6,486,305 B1 (PELTZ et al) 26 November 2002 (abstract, col 3, col 11-12, 15-16, 20-23, 27-29, 31, 35, 37-38, 41-42, claims 2 and 3)	1-4, 6-11, 14, 16, 17, 31-33, 37-45, 57-59
X	MENDELL, J.T. et al. Novel Upf2p orthologues suggest a functional link between translation initiation and nonsense surveillance complexes, Mole. and Cell. Biol., Vol. 20, No. 23, pages 8944-8957, Dec. 2000 (pages 8944-5, 8947, 8950)	14, 16, 17, 30
X	LELIVELT, M.J. et al. Yeast Upf proteins required for RNA surveillance affect global expression of the yeast transcriptome, Mole. and Cell. Biol., Vol. 19, No. 10, pages 6710-6719 (Oct. 1999) (pages 6710-6713, 6717)	14, 16, 17, 30-33, 37-38, 42, 57-59

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.*** Special categories of cited documents:**

"A" document defining the general state of the art which is not considered to be of particular relevance
 "E" earlier application or patent published on or after the international filing date
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
 "O" document referring to an oral disclosure, use, exhibition or other means
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
 "&" document member of the same patent family

Date of the actual completion of the international search

14 May 2004 (14.05.2004)

Date of mailing of the international search report

01 JUN 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Jane Zara

Telephone No. (703) 308-0196